Fire Contamination - Impact from Wildfire

Little Red River Cree Nation – Executive Summary

MBC Group

July 25, 2023

Subject:	**Fire Contamination – Impact from Wildfire Executive Summary**
For:	**Little Red River Cree Nation (LRRCN) Box 30 John D'Or Prairie, Alberta, T0H 3X0 Attn: Alain Joly**
Site:	**All Zones**
Site Address:	**Little Red River Cree Nation (LRRCN), Fox Lake, Alberta**
Date of Site Visit:	**June 23, 2023 – June 28, 2023**
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Report Date:	**July 25, 2023**

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Executive Summary

The fire contaminant and by-products assessment involved the collection of suspect fire contaminant and by-products by **MBC Group** at the location of **All Zones, Little Red River Cree Nation, Fox Lake, Alberta** to determine the presence and extent of possible fire contamination and by-products.

The representative fire contamination and by-products assessment was requested to determine the extent of fire contamination and by-products within structures as part of the re-occupancy and clean-up plan of the community. The assessment was conducted to determine possible remediation requirements.

Fire Contamination and By-Products

The results of the assessment conclude that *trace amounts* of fire by-products (presumptive soot "soot" and/or carbonized material "char") are present in surface particulate deposition within various structures for all zones.

The results of the assessment also conclude that *elevated* amounts of fire by-products (carbonized material "char") are present in some surface particulate deposition within various structures for all zones.

Introduction

The fire contamination and by-products assessment were conducted from June 23, 2023 to June 28, 2023 by Jeanette Marty and Joshua Campbell of **MBC Group.** The sampling was conducted on behalf of Alain Joly of **Little Red River Cree Nation**. The following report is an overview of the observations, findings, conclusions, and recommendations generated during the assessment.

Site History and Background Information

The community is comprised of approximately 400 structures (commercial and residential) throughout the Fox Lake area. A recent wildfire event occurred in early May 2023 which resulted in the evacuation of the community and surrounding areas. A representative fire contamination and by-products assessment was conducted to determine possible remediation efforts within the community.

General Comments and Recommendations

The following comments apply to the analysis as reported.

Fire Contaminant and By-Products

- Visual inspection combined with lab-based sampling suggests that fire by-product particulate is present and/or elevated in areas of all the structures assessed.
- Final remediation effort verification assessment and sampling is recommended following remediation efforts for clearance within structures.

Enhanced Cleaning Procedures – All Structures:

- Perform a cleaning of all horizontal and vertical surfaces.

  - Set up air scrubbers for 3 days (to remove particles and airborne contaminants).
  - Remove all attic insulation.
  - Smoke seal attic space.
  - HEPA vacuum walls/ceilings/floors.
  - Professional cleaning of all walls/ceilings/floors.
  - Biohazard cleaning of all food-containing equipment and storage areas.
  - Bag all clothes/contents in clear bags and leave onsite.
  - Bag all debris and leave onsite.
  - Smoke seal/paint (porous materials that cannot be cleaned).
  - Steam clean carpets/beds/furniture and all soft fabrics (curtains).
  - Deodorization and removal of smoke odor.
  - Pressure-wash of the exterior structure.
  - Clean furnace and duct work.
  - Mechanical and electrical inspections.
- Assess additional requirements by reviewing Safe Work Procedures for Wildfire Cleanup, contained within Appendix II.
- **A bulk sampling assessment for all attic insulation materials will be required prior to removal to determine the presence or absence of asbestos for all structures constructed prior to 1992.**

Recommendations for personal protective equipment for workers.

- Ensure all workers are, at a minimum, equipped with a National Institute for Occupational Safety and Health (NIOSH) approved half-masks with P-100, R-100 or N-100 particulate filters.
- Particulate filters/cartridges should be replaced at the beginning of each workday or in accordance with the calculated change out schedule, whichever time period is lower.
- Use impermeable protective clothing and gloves. Tape gloves to the sleeves of coveralls.
- Rubber steel toe boots with coveralls extended over boots, not tucked in.
- Protective eyewear with side shields or goggles.
- CSA approved hard hat.

Procedures for safe decontamination.

- Provide workers with site-specific decontamination procedure training prior to the start of work.
- Provide an area just outside the work perimeter where workers can wash their face and hands and take off personal protective equipment. The area should include disposal bins for used coveralls, gloves, and respirator cartridges and an area to clean boots, hard hats and respirators. The area should be supplied with clean water and a water/mild detergent solution.

Closure

This report is based on observations and collected data from June 23, 2023 to June 28, 2023. The conclusions made in this report are not a certification of the site's air quality. No warranty is expressed or implied as to final site conditions. This report provides an analysis and assessment of materials tested and is based on information provided to **MBC Group.**

Please contact the writer with any questions or concerns.

Sincerely,

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Senior Environmental Consultant

Reviewed by:

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Appendix I: Works Cited

- Government of Alberta. (2023). Occupational Health and Safety Act, Occupational Health and Safety Code. Edmonton: Alberta Kings printer.

- Center For Disease Control. (2009, 8 24). NIOSH National Institute for Occupational Safety and Health. Retrieved 8 25, 2009, from NIOSH National Institute for Occupational Safety and Health: http://www.cdc.gov/niosh/

Appendix II: Safe Work Procedures for Wildfire Cleanup

Safe Work Procedures for Wildfire Cleanup

What items will I need to throw out when I return home?

- Food, medicines, cleaning products, cosmetics, and other personal care products can be damaged by heat, smoke, ash, and the chemicals used to fight the fire. You may need to properly dispose of these items after your fire-damaged home has been inspected. Find more information about how to handle these items below. You may also need to throw out items that are not listed on this page.

How do I handle food that was in my home during the wildfire?

- Throw away food stored in your refrigerator, cooler, or freezer if the temperature inside the appliance goes above 4ºC **at any time**. If your appliance lost power at any time, the temperature may have gone above 4ºC when the power was off and then returned to 4ºC when the power came back on. Most fridges can keep food at 4ºC for about 4 hours without power.
- Throw away raw vegetables or fruits that were not in your fridge.

Check the rest of the food in your home, including canned goods and dry goods like flour, sugar, and spices, and **throw it out** if it:

- has spoiled, even if your fridge stayed at 4ºC at all times.
- was open.
- got damaged by fire or smoke, even if the package isn't open.
- was stored in containers with tiny holes (porous) like cardboard or foam containers.
- is in can that is bulging, rusted, or dented.
- was stored in a glass jar (the heat from the fire likely compromised the safety seal).

- Clean and disinfect all canned foods before opening them to make sure you don't contaminate the food, and be safe when checking your food. If you are in doubt, throw it out.

How do I replace or clean my fridge and freezer?

- Your fridge or freezer may have gone without power for some time and may smell. If you are keeping your fridge or freezer clean, disinfect, and deodorize them once you have thrown out all of the unsafe or spoiled food. To do this:
  1. Unplug the fridge and freezer.
  2. Rinse or blow out (with an air hose) the coils and compressors on the fridge and freezer.
  3. To clean the inside of the appliance, use soap and water and then rinse with clean water.
  4. After cleaning, sanitize the inside with bleach and water mixture. Mix 1/2 teaspoon (2 mL) of household bleach for every 4 cups (1 L) of water.
  5. Leave the doors of the fridge and freezer open and let them dry out.
  6. Once the fridge and freezer are dry, reconnect the power.
  7. Wait until the inside temperature of your fridge has reached 4ºC before refilling it with food.
  8. Wait until your freezer is cold enough to freeze food before refilling it with food.

What should I do with medicines and personal care products that were left in my home?

- Throw out medicines, cosmetics, and personal care products like soap, shampoo, and toothpaste that were exposed to smoke or high temperatures, even if the package isn't opened.

- Bring any medicines that need to be thrown out back to a pharmacy. Do not flush any medicines down the toilet or sink.

<u>Outside of your home</u>

- Use a hose, sprayer, or pressure washer on the outside of your home, driveway, walkway, vehicle, patio, deck, and outdoor furniture. Rinse off your air intake vents and air conditioner carefully. Do not use air hoses or leaf blowers to clean exterior surfaces because you could blow more ash and soot into your house. Before rinsing the exterior of your home, contact your local municipality to make sure there are no water or sewage restrictions.

- If you're in a tight or poorly ventilated space, be careful when using pumps, pressure washers, or generators. Keep doors and windows open. You are at risk for carbon monoxide poisoning if there isn't enough air flow.

- If you have a private septic system, check the area around your system for damage or sewage leaks. Contact a sewage disposal professional if you find damage to your septic system.

Air circulation

- Get the air moving inside your house by using a fan and opening your windows.

To help with clean air circulation in your home, you can also:

- Replace your furnace filter. You may need to do this more often than usual due to construction and cleaning activities in your home or neighbourhood. Check your filter often.
- Upgrade furnace filters to the highest efficiency your ventilation system can handle. They may help lower the levels of particles in the air in your home.
- Have your ducts and air conditioning system cleaned by a professional.
- Use a portable air cleaner, if you have one, with a high-efficiency particulate air (HEPA) filter to remove small particles. For air cleaners, follow all the manufacturer's instructions for changing the filter, where to place the device, and the size of room it's meant to be used in.
- Don't use ozone generators. They don't act as "air cleaners" and may pose safety hazards.

Inside of your home

- Wash all surfaces inside your home with mild detergent or an appropriate cleaning solution and rinse thoroughly. Clean any place where there's ash, dust, or the smell of fire. Wash the inside of closets, cupboards, and drawers.
- Wash the inside of your windows thoroughly.
- Use wet wiping or mopping. This is safer and better than dry or dust mopping, which can move ash and debris around your house. Change the water if it gets dirty.
- Only vacuum with a unit that has a HEPA filter that can catch ash particles. Using unfiltered vacuums will just move the ash around your house.
- Wash and clean all ash-contaminated household items with mild detergent. Change the water often.
- Try to clean as much ash and dust as possible. Ash that isn't cleaned up is broken into smaller particles and becomes harder to remove from carpets and surfaces.
- Attic insulation can keep smoke odours, so you may want to replace it.

Fabric, carpets, and clothing

- Remove soot before you try to clean or deodorize carpets, curtains, and soft furniture like your couch. Soot is oily and can stain these items.
- Steam clean carpets, drapes, curtains, and furniture. Change the water often.
- Wash or dry clean all your clothing and household linens that have been affected by the fire. You may have to run many rinse cycles to get out all the ash, soot, and smoke. Consider doing this laundry outside of your house.

Electronics

- Prior to using electronics, it is recommended that you take all electronic equipment outside and "blow out" the components with an air hose. Ash can cause static charges. Do not blow out components inside your home. Get any electronics checked by a qualified technician before using them again.

What should I do if my yard and outdoor play areas are impacted by fire ash and soot?

- If you decide to clean your yard and surrounding areas yourself, wear the appropriate PPE including masks, gloves, and disposable coveralls and follow these steps:
    - Wet down any fire debris. **Do not** wash the fire debris into the street.
    - Scrape up fire ash and soot from your property as much as possible. Place it in plastic bags or other containers that will keep it from being spread around and take it to a landfill. If your home or property was totally destroyed by fire, then the restoration company will look after this for you when they begin the demolition and recovery process.
    - For children's play areas and equipment, clear away any debris and remove puddles and standing water.
    - If there is fire or structural damage to play equipment, block access to the area until the equipment is repaired or replaced.
    - Use mild detergent and clean water to wash children outside toys, play equipment, and sports equipment.
    - Sand, gravel, or other loose materials placed under playground equipment should be removed and replaced, especially if you can see ash, soot, and small debris.
    - If you suspect or know that a sandbox was impacted by fire or fire retardants (fire fighting materials), replace the sand.

How do I clean up my lawn, gardens, trees, and plants?

- Rinse fire retardant off trees, shrubs, and plants if possible.
- Soak up any puddles or standing water that has fire retardant materials with soil or sand.
- Regularly wet down your garden and lawn until the smoke and ash have been diluted or reabsorbed into the air. Ash and soot on plants will continue to smell smoky for some time.
- If you choose to fix or put in new lawns, you can re-sod or reseed grassy areas.
- Consider adding new, clean soil to gardens if you suspect or know the area was damaged by the fire.
- Don't eat fruits and vegetables that were growing in your garden during the fire.
- Compost from bins that were closed during the fire can be kept and added into your soil as usual. Do not use compost from bins that were open during the fire.

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